GUIDANCE FOR CONTROLLING ASBESTOS-CONTAINING MATERIALS IN BUILDINGS

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INTRODUCTION

Airborne asbestos contamination in buildings is a significant environmental problem. Various diseases have been linked with industrial exposure to airborne asbestos, and the extensive use of asbestos products in buildings has raised concerns about exposure to asbestos in nonindustrial settings. Surveys conducted by the Environmental Protection Agency (EPA) estimate that asbestos containing materials can be found in approximately 31,000 schools and 733,000 other public and commercial buildings in this country.

The presence of asbestos in a building does not mean that the health of building occupants is necessarily endangered. As long as asbestos-containing material (ACM) remains in good condition and is not disturbed, exposure is unlikely. When building maintenance, repair, renovation or other activities disturb ACM, or if it is damaged, asbestos fibers are released creating a potential hazard to building occupants. Although not required to do so by federal law, the prudent building owner will take steps to limit building occupants' exposure to airborne asbestos. In 1983 EPA prepared and distributed "Guidance for Controlling Friable Asbestos-Containing Materials in Buildings" (USEPA 1983a). Since this guidance was published, EPA has gathered additional information and has gained valuable experience through its continuing Asbestos-in-Buildings Program. The guidance document has been substantially revised to incorporate this new information and to reflect the comments and suggestions of building owners and other readers. EPA offers building owners guidance to understand the technical issues, determine if asbestos is present in a building, plan a control program, and choose the course of further action if necessary.

This summary is divided into two parts. The first is an introduction to the problem of asbestos in buildings and summarizes the material that is presented in Chapter 1. The second part of the summary provides a concise outline of the remainder of the report. It lists the major steps needed to determine whether asbestos is present in a building (Chapter 2), establish a special operations and maintenance (O&M) program (Chapter 3), assess the need for further action (Chapters 4 and 5), and carry out an abatement project (Chapter 6). It is intended as a checklist for the building owner.

ACM IN BUILDINGS

ACM in buildings is found in three forms: (1) sprayed or troweled on ceilings and walls (surfacing material); (2) in insulation around hot or cold pipes, ducts, boilers, and tanks (pipe and boiler insulation); and (3) in a variety of other products such as ceiling and floor tiles and wall boards (miscellaneous materials). In general, ACM in the first two categories is of greatest concern, especially if it is friable. (Friable material can be crumbled, pulverized, or reduced to powder by hand pressure.)

Testing for ACM is required in primary and secondary schools only. (Regulations are specified in "The Friable Asbestos-Containing Materials in Schools; Identification and Notification Rule.") At present, no parallel rule applies to other public or commercial buildings. Further, no Federal regulations require abatement actions (repair or removal, enclosure, encapsulation).

The OSHA (Occupational Safety and Health Administration) regulations specifying work practices and the EPA rules governing the handling and disposal of asbestos apply to abatement actions. State regulations on these issues vary and may be more stringent than federal requirements.

ASBESTOS CONTROL ACTIVITIES

The following pages outline the steps that a building owner should take to control asbestos. Each step is described in more detail in the body of the report.

CHAPTER 1. BACKGROUND ON EXPOSURE TO ASBESTOS INSIDE BUILDINGS

Construction materials containing asbestos have been used extensively in schools and other buildings. The concern about exposure to asbestos in these buildings is based on evidence linking various respiratory diseases with occupational exposure in the shipbuilding, mining, milling, and fabricating industries. The presence of asbestos in a building does not mean that the health of building occupants is endangered. If asbestos-containing material (ACM) remains in good condition and is unlikely to be disturbed, exposure will be negligible. However, when ACM is damaged or disturbed — for example, by maintenance or repairs conducted without proper controls — asbestos fibers are released. These fibers can create a potential hazard for building occupants.

This chapter describes ACM found in buildings and the potential health risks to occupants of buildings where ACM is present. Also, federal regulations addressing asbestos in buildings are briefly summarized.

SUMMARY

ACM in Buildings: Three forms of asbestos are typically found in buildings: (1) sprayed-or troweled-on surfacing materials; (2) insulation on pipes, boilers, and ducts; and (3) miscellaneous forms, such as wallboard, ceiling tiles, and floor tiles. EPA surveys estimate that 31,000 schools and 733,000 public and commercial buildings contain friable (easily crumbled) ACM. Friable ACM and ACM disturbed during maintenance, repair or renovation are of greatest concern from an exposure perspective.

Levels of Airborne Asbestos in Buildings and Other Settings: Prevalent levels of airborne asbestos inside buildings with ACM may be 10 to 100 times higher than outdoor levels. However, these indoor levels are typically 10,000 to 100,000 times lower than levels in asbestos industry workplaces where asbestos-related diseases have been well-documented.

Asbestos-Related Disease: Most people with asbestos-related diseases (asbestosis, lung cancer, and mesothelioma) were exposed to high levels of asbestos while working in asbestos industries prior to 1972. Extrapolation of the relationship between exposure level and disease indicates that only a small proportion of people exposed to low levels of asbestos will develop asbestos-related diseases. Smokers, children, and young adults are at somewhat greater risk.

Federal Regulations Regarding Asbestos in Buildings: Current regulations (1) restrict the use of most asbestos products in new buildings, (2) specify work practices for removal of ACM from buildings, and (3) require the identification of asbestos in schools. There are no exposure standards for nonindustrial settings, and no regulations requiring corrective actions in buildings with ACM.

1.1 Asbestos-Containing Materials in Buildings

Asbestos may be found in cement products, acoustical plaster, fireproofing textiles, wallboard, ceiling tiles, vinyl floor tiles, thermal insulation, and other materials.[1] EPA surveys estimate that 31,000 schools and 733,000 federal and commercial buildings have ACM in one form or another (USEPA 1984a, 1984b). ACM has been grouped into three categories: (1) sprayed- or troweled-on materials on ceilings, walls, and other surfaces; (2) insulation on pipes, boilers, tanks, ducts, and other equipment; and (3) other miscellaneous products. (Examples of ACM are shown in Figure 1.) Material in the first two categories can be friable, that is, it can be crumbled, pulverized, or reduced to powder by hand pressure. Most ACM in the third category is nonfriable.

[1] Descriptions of these and other types of products containing asbestos appear in Appendix A.

1.4 Federal Regulations Regarding Asbestos in Buildings

Both EPA and OSHA have published regulations to reduce asbestos exposure. EPA regulations focus on: (1) application and removal of ACM in new or remodeled buildings, and (2) identification of friable asbestos in schools. EPA also regulates the industrial emission of asbestos fibers and the disposal of asbestos waste. OSHA addresses worker protection in the workplace.

The first EPA regulations were issued in 1973 under the National Emission Standards for Hazardous Air Pollutants (NESHAPS), as authorized by the Clean Air Act. The first regulations were directed largely at the asbestos industries, but also partially banned spray-applied ACM in new buildings, and established procedures for handling ACM during demolition. The regulations were revised in 1975 and 1976 to cover building renovations, the use of all types of insulating ACM in new buildings, and asbestos emissions from ACM waste disposal.[4]

Of particular interest to owners of buildings with ACM are the following regulations:

- When a building is demolished — or more than 260 linear ft. of asbestos pipe insulation or 160 sq. ft. of asbestos surfacing material are removed during renovation — advance notice must be filed with the EPA regional office and/or the state, giving:

  — name and address of the building owner or manager;
  — description and location of the building;
  — scheduled starting and completion dates of ACM removal;
  — description of the planned removal methods; and
  — name. address, and location of disposal site.

- ACM can be removed only with wet removal techniques (see Section 5.1). Dry removal is allowed only under special conditions and only with written EPA approval.

- No visible emissions of dust are allowed during removal, transportation, and disposal of ACM. (The wet removal techniques described in Section 5.1 are designed to satisfy this requirement.)

The entire text of the NESHAPS regulations appears in Appendix C. Before beginning any ACM removal or building demolition, the building owner should review the NESHAPS requirements in detail. More information can be obtained from the regional NESHAPS contact. Addresses and telephone numbers of the contacts are found in Appendix D.

The second set of EPA regulations is in the "Friable Asbestos-Containing Materials in Schools; identification and Notification Rule," (40 CFR Part 763)[5] promulgated under the Toxic Substances Control Act. Known as the Asbestos-in-Schools rule, it requires all primary and secondary schools, both public and private, to:

- inspect, sample, and analyze friable materials for asbestos;

- document all findings; and

- inform all school employees and the school's parent-teacher organization (or parents, if there is no organized group) of the location of friable ACM, and provide each custodial worker with a copy of the EPA publication, "A Guide for Reducing Asbestos Exposure." as published in the FEDERAL REGISTER (40 CFR Part 763).

[4] The complete set of regulations was repromulgated on April 5, 1984.

[5] The deadline for compliance with the Rule was June 28, 1983. A Copy of the Rule is available from EPA. See Appendix E.

The OSHA regulations were first issued in 1972 and modified in 1976. They specify airborne exposure standards for asbestos workers, engineering and administrative controls, workplace practices, and medical surveillance and worker protection requirements. In 1982, OSHA announced its intention to tighten the exposure standards. (See the "Calendar of Federal Regulations," published in the FEDERAL REGISTER [47 FR 1807] .)[6] The OSHA regulations apply to all workplace activities involving asbestos, including removal of ACM from buildings. Future OSHA regulations may include separate exposure standards for ACM removal operations. The complete text of the OSHA regulations appears in Appendix F.

OSHA'S worker exposure standards are inappropriate for nonindustrial settings. First, the standards were set to protect workers only against asbestosis, which does not occur at the lower exposure levels typical of buildings with ACM. Second, the measurement technique that determines OSHA compliance does not distinguish between asbestos and nonasbestos fibers and does not measure the small asbestos fibers typically found in buildings with ACM.

The measurement problem is not a major shortcoming in industrial settings where most airborne fibers are expected to be asbestos. However, only a few fibers in building air are asbestos, and the OSHA measurements may be misleading, (Other limitations of the OSHA technique further confound the measurement of airborne asbestos in buildings. See Section 4.1.2 for a more detailed discussion of measuring airborne asbestos.)

[6] As of July 1, 1976, the OSHA standards were set at 2 fibers per cubic centimeter averaged over 8 hours and a ceiling level not to exceed 10 fibers per cubic centimeter "at any time." OSHA is now evaluating the effect of lowering the 8-hour standard to either 0,5 or 0.2 fibers per cubic centimeter in order to protect workers against cancer, as published in the FEDERAL REGISTER (47 FR 1807).

2.1.2 Obtaining Cooperation

An ACM survey will be successful only if everyone in building management cooperates. Most importantly, the building owner must be convinced that exposure to asbestos is potentially a serious problem, and that a careful survey for ACM is needed. The asbestos program manager and the building owner must have a close working relationship.

Beyond this, cooperation must be obtained from building maintenance, operations, and planning personnel. A survey for ACM can disrupt normal building activities. Occupants will be concerned and curious. The survey team must be prepared to discuss the purpose of the survey in a way that is realistic, yet does not cause undue anxiety. Questions requiring a lengthy response should be referred to the program manager.

2.2 Conducting the Survey

The survey involves a review of building records and an inspection of the building for friable materials. The inspection is the more important component of the survey since building records are often incomplete and unreliable. Whenever the presence of asbestos is in doubt, prudence is recommended: treat the material as if it contains asbestos.

2.2.1 General Survey Elements

Figure 4 illustrates the survey steps. Begin by reviewing building records to see if ACM was specified at any stage. Although building records are often unreliable, they are a useful starting point. Check the original plans, shop drawings, remodeling records, and work change orders. Appendix A is a list of the most common uses and types of ACM in buildings since 1960. If any of these items appears in the records, assume that asbestos is in the building. Identify ACM mentioned in building records by type: (1) troweled-or sprayed-on surfacing material, (2) pipe and boiler insulation, or (3) other miscellaneous ACM.

Next, inspect the building for ACM identified in the building records. Determine if the materials are friable and record the findings. They may be sampled and analyzed to confirm the presence of asbestos. Thoroughly inspect all areas of the building for friable materials and sample them. The specific procedures for inspection and sampling vary depending on which of the three types of material are involved. The sampler of building materials should wear a respirator to prevent inhalation of fibers. (See Section 5.1 for information on respirators.)

2.2.2 Procedures for Sprayed- or Troweled-on Surfacing Materials

Surfacing materials can be friable or nonfriable. Friable forms are either very fibrous and fluffy (sometimes like cotton candy) or granular and cementitious (review Figure 1). Since friable materials are more likely than nonfriable materials to release fibers when disturbed, the first priority is to identify those friable surfacing materials that contain asbestos. As shown in Figure 5, the first step is to locate ACM specified in building records and determine its friability. Then, identify all friable surfacing materials in the building and take samples to be analyzed for asbestos.

2.2.2.1 Surfacing Materials identified as ACM in Building Records

Begin by locating any acoustical plaster or other surfacing materials that, according to building records, contain asbestos. Rub these materials to see if they crumble or produce a light powder. If so, consider them friable. (When disturbing material that may contain asbestos, the inspector should wear protective equipment.) Either assume that these materials contain asbestos, or sample and analyze them, as discussed below. Record the location and degree of friability.

- HEPA-vacuum all carpets.
- Wet-mop all other floors and wipe all other horizontal surfaces with damp cloths.
- Dispose of all debris, filters, mopheads, and cloths in plastic bags according to EPA regulations for disposal of asbestos waste.

Building Maintenance

The special O&M program coordinator should:

- Ensure that recommended procedures and safety precautions will be followed before authorizing construction and maintenance work involving surfacing ACM (see Section 5.1). Specifically, containment barriers should be erected around the work area and workers should wear coveralls as well as respirators.

Maintenance staff should:

- Clear all construction, renovation, maintenance, or equipment repair work with the O&M program coordinator in advance.
- Avoid patching or repairing any damaged surfacing ACM until the ACM has been assessed by the asbestos program manager.
- Mist filters in a central air ventilation system with water from a spray bottle as the filters are removed. Place the filters in plastic bags and dispose of them according to EPA regulations.

Periodic Inspection

Building inspectors should:

- Inspect all ACM materials for damage or deterioration at least twice a year and report findings to the O&M program coordinator. (See Chapter 4 for detailed information on assessing ACM.)
- Investigate the source of debris found by the custodial staff.

Custodial and maintenance staff should:

- Inform the O&M program coordinator when damage to ACM is observed or when debris is cleaned up.

An illustrated EPA pamphlet, "Asbestos in Buildings—Guidance for Service and Maintenance Personnel" (USEPA 1985a), maybe especially useful in publicizing and initiating the special O&M program. Contact the RAC or call the EPA toll-free line for copies of the pamphlet (see Appendix E for telephone numbers).

The special O&M program should continue until all surfacing ACM is removed. Overtime, the special O&M program may need to be altered if the ACM is enclosed or encapsulated (refer to Section 5.1).

3.3.2 Special Practices for Pipe and Boiler Insulation

Asbestos-containing pipe and boiler insulation typically is a less significant source of airborne asbestos fibers than surfacing ACM. Unless damaged, protective jackets around such insulation prevent fiber release.

CHAPTER 4. ASBESTOS CONTROL BEYOND SPECIAL OPERATIONS AND MAINTENANCE

If a building contains ACM, implementing a special O&M program will remove asbestos fibers and limit further fiber release. Once the program is operational, the need for additional asbestos control or abatement should be considered. Three questions need to be answered:

- Is abatement necessary?
- When should abatement be done?
- What abatement method should be used?

In some situations, assessing the need for abatement is a straightforward process. Badly damaged ACM in public areas should be removed immediately. ACM in good condition with virtually no chance of being disturbed except under controlled conditions (e.g., during scheduled repairs) requires no additional action, at least not immediately. (An example of the latter is tightly bound, undamaged ACM insulation wrapped around heating or water pipes.) Deciding how to control ACM is complicated; assessment requires simultaneous consideration of the type and condition of the material, timing and alternative abatement methods, as well as constraints that are specific to individual buildings.

This chapter contains an approach to assessing the need for abatement, determining its timing, and choosing an abatement method. Factors used in the decision-making process are introduced and discussed. The three types of ACM — surface material, pipe and boiler insulation and miscellaneous products — are treated separately. Constraints that affect individual owners or buildings are also discussed,

SUMMARY

Assessment Information:

- The likelihood of fiber release from ACM is based on evaluating its current condition and the potential for future disturbance, damage, or erosion.
- Air monitoring alone should not be used for assessment.

The Assessment Process:

The likelihood of fiber release from ACM determines the need for and timing of additional action. The nature and location of the material determines the abatement method.

- **Surfacing Materials**

Need: Surfacing material in good condition and with a low potential for future disturbance, damage, or erosion may need no further action.

Timing: ACM in poor condition should be dealt with first. If ACM is in good condition but has a high potential for future fiber release, abatement can be scheduled with building renovation or maintenance.

Method: Removing the ACM is the only permanent solution. Enclosure and encapsulation are temporary solutions to be implemented in special circumstances.

- **Pipe and Boiler Insulation**

  Need: If the insulation is intact, no further action is needed.

  Timing: Damaged insulation should be repaired or replaced as soon as possible.

  Method: Removal is appropriate where the insulation is extensively damaged or deteriorated
  Repair is appropriate where the insulation has minor damage.

- Other Types of ACM

  A special O&M program is usually all that is needed.

Further Considerations in Selecting an Abatement Schedule:

- If an abatement project is not urgent, it will be less costly if combined with building repair, renovation, or expansion, or with scheduled maintenance to equipment and building systems.

- Other factors that may influence the timing of abatement include:

  — The pattern of normal building operations;
  — The building owner's legal liability;
  — Pressures from building occupants and the public; and
  — Expected useful life of the building.

4.1 Assessment Information

The need for asbestos control beyond a special O&M program depends on the likelihood of fiber release from ACM. The possibility of fiber release should be assessed by evaluating the material's condition, physical characteristics, and location. Another approach is to measure the current levels of asbestos in the air. As explained below, however, assessment by air monitoring alone is not recommended because it reflects conditions only at the time of sampling. In addition, air monitoring is technically difficult and expensive.

4.1.1 Potential Fiber Release

Factors for assessing fiber release potential are listed in Table 1. (Figures 7 and 8 illustrate some of these factors.) The first set of factors focuses on the current condition of ACM. If water or physical damage, deterioration, or delamination of the material is evident, then fiber release has occurred, is occurring, or is likely to occur. The appearance of the material and the presence of broken or crumbled material on horizontal surfaces indicate fiber release.

Factors under the second heading in Table 1 reflect potential fiber release due to disturbance or erosion. Visible, highly accessible materials in areas frequently used or needing periodic maintenance are most vulnerable to physical damage. Also in this category are materials subject to vibration from mechanical equipment, sound, or athletic activities — for example, materials near a gymnasium or band room, or in buildings near an airport or highway. ACM in an air plenum or near a forced airstream (e.g., air from a heating vent) is likely to suffer surface erosion. In addition, fibers released into an airstream may be transported to other parts of the building, possibly exposing more people. Any planned changes in building use should also be considered when assessing potential fiber release.

Table 1. Factors for Assessing Potential Fiber Release
(See Appendix H for more detail.)

Current Condition of ACM
• Evidence of deterioration or delamination from the underlying surface (substrate)
. Evidence of physical damage (e.g., presence of debris)
. Evidence of water damage
Potential for Future Disturbance, Damage, or Erosion of ACM
• Proximity to air plenum or direct airstream
• Visibility, accessibility (to building occupants and maintenance personnel), and degree of activity (air movement, vibration, movement of building occupants)
• Change in building use

The factors in Table 1 are fully described in Appendix H. The descriptions should assist the evaluator in assessing ACM at individual sites.

A simple "present" or "absent," "high" or "low" rating should be used for each factor. More elaborate rating schemes have been tried. For example, factors have been assigned numerical scores and, using mathematical formulas, the scores have been combined into indices to reflect potential exposure.[1] These "exposure indices" have met with mixed success. In tests, several indices showed wide variation from one rater to the next and often did not indicate current, elevated airborne asbestos levels (e.g., USEPA 1983b). Assigning numerical ratings to assessment factors and combining them into a single score cannot be recommended. However, the factors are useful when they are scored with a simple, nonnumerical rating scheme.

4.1.2 Air Monitoring

Another way to assess asbestos fiber release is to measure asbestos fibers in the air. This approach is appealing because it quantitatively measures airborne asbestos contamination. However, it measures only current conditions and provides no information about fiber release potential and future air levels. Moreover, implementing an effective monitoring program to measure current levels of airborne asbestos is difficult and can be expensive.

One proposed method for measuring airborne asbestos in buildings was developed by the National Institute for Occupational Safety and Health (NIOSH) in connection with the OSHA asbestos exposure standard for workplace settings. This method uses phase contrast microscopy (PCM), which may be effective for industrial measurements where most airborne fibers are asbestos, but is less useful in settings with much lower asbestos levels. PCM is not sensitive to fibers with diameters less than 0.2 micrometers.[2] In addition, the NIOSH method excludes fibers shorter than 5 micrometers and does not distinguish between

[1] See, for example, Lory 1980, Pinchin 1982, and USEPA 1979.

[2] A micrometer is one-millionth of a meter. See Appendix B for a simple discussion of measurement units used to describe and measure asbestos fibers.

asbestos and non-asbestos fibers. Many airborne fibers in buildings with ACM are likely to be thinner and shorter than these limits (Chatfield 1983 and NRC 1984), and are likely to include fibers from carpets, clothing, hair, paper, books, and many other sources. As a result, PCM analyses of air inside these buildings could be seriously misleading.

Other methods measure both small and large fibers and distinguish asbestos from non-asbestos materials. Those methods count fibers by electron microscopy, and confirm that the fibers are asbestos with chemical and crystallographic analyses. The analytical transmission electron microscope (TEM)[3] is the most sensitive and asbestos-specific instrument. EPA has used TEM in experiments to establish baseline asbestos levels indoors and outdoors. However, obtaining enough samples to estimate prevalent airborne levels is difficult in occupied buildings. In addition, TEM analysis is expensive (ranging from $200 to $600 per sample) and few laboratories are qualified to perform it. These limitations, combined with the inability of air monitoring to provide information on future conditions, restrict its usefulness for assessment. EPA, therefore, does not recommend it as a primary assessment tool at this time. (Air monitoring does have a role, however, in determining when an abatement project is complete. See Section 6.4.)

4.2 The Assessment Process

The assessment factors discussed above are used to decide if additional asbestos control is needed and, if so, when and what method. Although the process is similar for each of the three types of ACM, the details are specific to each type and are discussed separately below.

4.2.1 Sprayed- and Troweled-on Surfacing Materials

4.2.1.1 Need

Use the factors described in 4.1.1 to determine the current condition of the ACM and the potential for future disturbance, damage, or erosion. Table 2 shows how these two considerations influence the decision regarding action beyond a special O&M program. Surfacing material in good condition may need no further action if potential for future disturbance, damage, or erosion is low. The material must be inspected regularly (see Section 3.3.1) to assure that it remains in good condition. Further action is needed if the material is damaged or in poor condition, or if there is high potential for future disturbance or erosion.

4.2,1.2 Timing

When further action is necessary, its timing must be carefully considered. A well-planned and executed abatement program is needed to ensure that the abatement activity itself does not create a hazard. If the ACM is currently in good condition, but the potential for future fiber release is high, scheduling of asbestos abatement can take advantage of other building plans. For example, renovation work, which requires precautions to control fiber release, provides an opportunity to remove, encapsulate, or enclose ACM. There are no set rules to determine the timing of asbestos abatement, since circumstances vary from building to building. Table 2 provides a guide.

As one moves through the table from left to right (from good to poor condition) and from top to bottom (from low to high potential for disturbance, damage, or erosion), the need for immediate action increases. Material in poor condition should be dealt with first. Materials that are in better condition or have a low potential for disturbance or erosion have a lower priority.

[3] A provisional method for TEM measurement of asbestos has been developed by EPA (USEPA 1977).

Table 2. Assessment Table for Surfacing Materials

Potential for Future Damage, Disturbance, or Erosion	Current Condition of ACM		
	Good*	**Minor Damage or Deterioration**	**Poor**
Low	No Further Action Now Beyond Special O & M Program	Selective or Complete Removal as Soon as Possible	Removal as Soon as Possible
High †	Removal, Enclosure, Encapsulation Integrated with Other Building Activities		

* Good condition means no water damage, physical damage, or deterioration.

† High potential means that ACM is exposed or accessible, in an air plenum or airstream, or subject to vibration

Appendix C. USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M)

AUTHORITY Secs. 112 and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7412, 7601(a)).

SOURCE: 49 FR 13661, Apr. 5, 1964, unless otherwise noted.

§ 61.140 Applicability.

The provisions of this subpart are applicable to those sources specified in §§ 61.142 through 61.153.

§ 61.141 Definitions.

All terms that are used in this subpart and are not defined below are given the same meaning as in the Act and in Subpart A of this part.

Active waste disposal site means any disposal site other than an inactive site.

Adequately wetted means sufficiently mixed or coated with water or an aqueous solution to prevent dust emissions.

Asbestos means the asbestiforrn varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite.

Asbestos-containing waste materials means any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes asbestos mill tailings, asbestos waste from control devices, friable asbestos waste material, and bags or containers that previously contained commercial asbestos. However, as applied to demolition and renovation operations, this term includes only friable asbestos waste and asbestos waste from control devices.

Asbestos material means asbestos or any material containing asbestos.

Asbestos mill means any facility engaged in converting, or in any intermediate step in converting, asbestos ore into commercial asbestos. Outside storage of asbestos material is not considered a part of the asbestos mill.

Asbestos tailings means any solid waste that contains asbestos and is a product of asbestos mining or milling operations.

Asbestos waste from control devices means any waste material that contains asbestos and is collected by a pollution control device.

Commercial asbestos means any asbestos that is extracted from asbestos ore.

Demolition means the wrecking *or* taking out of any load-supporting structural member of a facility together with any related handling operations.

Emergency renovation operation means a renovation operation that was not planned but results from a sudden, unexpected event. This term includes operations necessitated by nonroutine failures of equipment.

Fabricating means any processing of a manufactured product that contains commercial asbestos, with the exception of processing at temporary sites for the construction or restoration of facilities.

Facility means any institutional, commercial, or industrial structure, installation, or building (excluding apartment buildings having no more than four dwelling units).

Facility component means any pipe, duct, boiler, tank, reactor, turbine, or furnace at *or* in a facility: or any structural member of a facility.

Friable asbestos material means any material containing more than 1 percent asbestos by weight that hand pressure can crumble, pulverize, or reduce to powder when dry.

Inactive waste disposal site means any disposal site or portion of it where additional asbestos-containing waste material will not be deposited and where the surface is not disturbed by vehicular traffic.